CLAIM AMENDMENTS

Please amend the claims as follows:

1. (currently amended) An electromagnetic rotary actuator, ~~to be~~ controlled by a single voltage, ~~and~~ comprising:

a rotor movable about an axis and having permanent magnets; and

a stator carrying at least one winding and an airgap between facing surfaces of the permanent magnets and of the stator, the permanent magnets being arranged to have flux lines extending in the airgap substantially in a radial direction from or towards the axis,

~~characterized in that~~ wherein the stator ~~have~~ has at least three pole teeth made of a magnetically permeable material, in particular a soft-iron material, the at least one winding being applied around a central one of the pole teeth, and the pole teeth having end surfaces forming the facing surfaces of the stator and thus facing surfaces of the permanent magnets over the airgap.

2. (currently amended) ~~An~~ The electromagnetic rotary actuator according to claim 1, ~~characterized in that~~ wherein the end surfaces of the pole teeth are located close to the facing surfaces of the permanent magnets creating a small airgap, the airgap being

[preferably] smaller than 0.5 mm ~~and most preferably smaller than 0.3 mm~~.

3. (currently amended) [An] The electromagnetic rotary actuator according to claim[s] 1, [characterized in that] wherein at least three pole teeth carry windings, all windings being connected to one single voltage source, and the pole teeth carrying windings being located centrally[, preferably around a central pole tooth].

4. (currently amended) ~~An~~ The electromagnetic rotary actuator according to claim 3, ~~characterized in that~~ wherein the actuator comprises five pole teeth, the two pole teeth which are not located centrally being unwound.

5. (currently amended) ~~an~~ The electromagnetic rotary actuator according to claim 1, ~~characterized in that~~ wherein the actuator comprises exactly three pole teeth and the pole teeth are arranged within an angle, taken from the axis, of at most somewhat more than a third of a full turn , ~~in particular within an angles smaller than 130°~~.

6. (currently amended) ~~An~~ The electromagnetic rotary actuator according to claim 1, ~~characterized in that~~ wherein the actuator

comprises exactly five pole teeth and the pole teeth are arranged within an angle, taken from the axis, of at most somewhat more than half a full turn ~~, in particular within an angle smaller than 225°~~.

7. (currently amended) ~~An~~ The electromagnetic rotary actuator according to claim 1, ~~characterized in that~~ wherein the rotor and stator poles have the same pitch.

8. (currently amended) ~~An~~ The electromagnetic rotary actuator according to claim 1, ~~characterized in that~~ wherein an angular sector extending between the two outermost ends of the pole teeth portions facing the air gap is longer than the sum of the peak to peak movement of the rotor and an ~~the~~ angular sector extending between the two outermost ends of the rotor magnet or magnets facing the air gap.

9. (currently amended) ~~An~~ The electromagnetic rotary actuator according to claim 1, ~~characterized in that~~ wherein an angular sector between the two outermost ends of the pole teeth portions facing the air gap is substantially equal to the sum of the peak to peak movement of the rotor and an ~~the~~ angular sector extending between the two outermost ends of the rotor magnet or magnets facing the air gap.

10. (currently amended) ~~An~~ The electromagnetic rotary actuator according to claim 1, ~~characterized in that~~ wherein an angular sector extending between the two ends of a stator pole tooth facing the air gap is longer than the sum of the peak to peak movement of the rotor and an angular sector extending between an end of a rotor magnet part facing the air gap and the nearest end of an adjacent rotor magnet facing the air gap.

11. (currently amended) ~~An~~ The electromagnetic rotary actuator according to claim 1, ~~characterized in that~~ wherein a ~~the~~ normally cylindrical surface angular sector of at least one stator pole part facing the air gap to the rotor magnet pole parts have an adjusted shape to reduce the cogging torque of the actuator.

12. (currently amended) ~~An~~ The electromagnetic rotary actuator according to claim 1 ~~12~~, ~~characterized in that the~~ wherein two outmost stator pole air gap surfaces have an adjusted shape ~~to reduce~~ which reduces the cogging torque of the actuator.

13. (currently amended) An electromagnetic rotary actuator ~~according to claim 1~~, controlled by a single voltage, comprising:

a rotor movable about an axis and having permanent magnets; and

a stator carrying at least one winding and an airgap between facing surfaces of the permanent magnets and of the stator, the permanent magnets being arranged to have flux lines extending in the airgap substantially in a radial direction from or towards the axis,

wherein the stator has at least three pole teeth made of a magnetically permeable material, in particular a soft-iron material, the at least one winding being applied around a central one of the pole teeth, and the pole teeth having end surfaces forming the facing surfaces of the stator and thus facing surfaces of the permanent magnets over the airgap,

wherein each of the stator poles carrying winding coils has a reduced height in the axial direction at places of the stator pole where the winding is located, thereby permitting a portion of the stator pole located at the airgap and at a radially inner surface of the stator pole to be longer in the axial direction than a portion of stator pole located inside the stator pole winding.

14. (currently amended) ~~An~~ The electromagnetic rotary actuator according to claim 1, ~~characterized by~~ further comprising: an electronic driver circuit connected to the at least one winding, said electronic driver circuit including a ~~and comprising~~ resistance ~~changing means~~ changer to increase a resistance in

series with the actuator winding when a longer electric time constant is advantageous or required and to reduce the resistance in series with the actuator winding when a short electric time constant is advantageous or required.

15. (currently amended) An electromagnetic rotary machine ~~having~~ comprising:

a rotor rotatable about a rotational axis; ~~and~~

a stator comprising magnetically permeable stator poles carrying winding coils, each of the winding coils being assembled around a single one of the stator teeth~~,~~; and

a cylindrical or part-cylindrical airgap being located between a radially outer surface of the rotor and radially inner surfaces of the stator poles, ~~characterized in that~~

wherein each of the stator poles carrying winding coils has a reduced height in the axial direction at places of the stator pole where the winding is located, thereby permitting a portion of the stator pole located at the airgap and at the radially inner surface of the stator pole to be longer in the axial direction than a portion of the stator pole located inside the stator pole winding.

16. (currently amended) An electronic circuit for driving a single

phase rotary actuator, particularly an actuator having a long electric time constant, the electronic circuit being connected to a winding or windings of the actuator, ~~characterized by~~ wherein a resistance changer ~~changing means to~~ increases a resistance in series with the actuator winding when a longer electric time constant is advantageous or required and ~~to~~ reduces the resistance in series with the actuator winding when a shorter electric time constant is advantageous or required.

17. (currently amended) ~~An~~ The electronic circuit according to claim 16, ~~characterized in that~~ wherein the resistance changer ~~changing means~~ comprise:

a first bridge leg directly connected to a terminal of the actuator winding; and

a second bridge leg connected through a resistor to the same terminal of the actuator coil.

18. (currently amended) ~~An~~ The electronic circuit according to claim 17, ~~characterized in that~~ wherein the resistance changer ~~changing means comprise means for varying~~ varies the impedance of a resistor having a controllable resistance~~, in particular a MOSFET~~.

Please add the following new claims:

19. (New) The electronic circuit according to claim 17, wherein the resistance changer is a MOSFET.

20. (New) The electromagnetic rotary actuator according to claim 2, wherein the airgap is smaller than 0.3 mm.

21. (New) The electromagnetic rotary actuator according to claim 3, wherein the pole teeth are located around a central pole tooth.

22. (New) The electromagnetic rotary actuator according to claim 5, wherein the pole teeth are arranged within an angle smaller than 130 degrees.

23. (New) The electromagnetic rotary actuator according to claim 6, wherein the pole teeth are arranged within an angle smaller than 225 degrees.

24. (New) The electromagnetic rotary actuator according to claim 1, wherein the stator includes a substantial opening, in a circumferential plane, such that a portion of the rotor is exposed in the circumferential plane.

25. (New) The electromagnetic rotary actuator according to claim 1, wherein the single voltage applied is a single phase.